

**APPLICATION FOR PERMIT TO:**

**Drill**       Deepen       Re-enter       Recomplete and Operate

TYPE OF WELL    OIL <input checked="" type="checkbox"/> GAS <input type="checkbox"/> COALBED <input type="checkbox"/> OTHER _____ ZONE TYPE       SINGLE ZONE <input checked="" type="checkbox"/> MULTIPLE ZONES <input type="checkbox"/> COMMINGLE ZONES <input type="checkbox"/>	Refiling <input type="checkbox"/> Sidetrack <input type="checkbox"/>
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Date Received:  
06/24/2015

Well Name: Ivey      Well Number: L-14-23HN  
 Name of Operator: SYNERGY RESOURCES CORPORATION      COGCC Operator Number: 10311  
 Address: 20203 HIGHWAY 60  
 City: PLATTEVILLE      State: CO      Zip: 80651  
 Contact Name: Erin Ekblad      Phone: (303)942-0506      Fax: ( )  
 Email: eekblad@syrginfo.com

**RECLAMATION FINANCIAL ASSURANCE**  
 Plugging and Abandonment Bond Surety ID: 20090043

**WELL LOCATION INFORMATION**  
 QtrQtr: SWSE      Sec: 11      Twp: 1S      Rng: 68W      Meridian: 6  
 Latitude: 39.973567      Longitude: -104.966725  
 Footage at Surface: 562 feet      FNL/FSL FSL      2047 feet      FEL/FWL FEL  
 Field Name: SPINDLE      Field Number: 77900  
 Ground Elevation: 5110      County: ADAMS  
 GPS Data:  
 Date of Measurement: 05/07/2014      PDOP Reading: 2.0      Instrument Operator's Name: Owen McKee  
 If well is  Directional       Horizontal (highly deviated)      **submit deviated drilling plan.**  
 Footage at Top of Prod Zone:      FNL/FSL      FEL/FWL      Bottom Hole:      FNL/FSL      FEL/FWL  
    465      FNL      1510      FEL      2602      FNL      1510      FEL  
    Sec: 14      Twp: 1S      Rng: 68W      Sec: 23      Twp: 1S      Rng: 68W

**LOCATION SURFACE & MINERALS & RIGHT TO CONSTRUCT**  
 Surface Ownership:  Fee       State       Federal       Indian  
 The Surface Owner is:  is the mineral owner beneath the location.  
 (check all that apply)  is committed to an Oil and Gas Lease.  
     has signed the Oil and Gas Lease.  
     is the applicant.  
 The Mineral Owner beneath this Oil and Gas Location is:  Fee       State       Federal       Indian  
 The Minerals beneath this Oil and Gas Location will be developed by this Well: Yes  
 The right to construct the Oil and Gas Location is granted by: oil and gas lease  
 Surface damage assurance if no agreement is in place: \_\_\_\_\_      Surface Surety ID: \_\_\_\_\_

**LEASE INFORMATION**

Using standard QtrQtr, Sec, Twp, Rng format, describe one entire mineral lease that will be produced by this well (Describe lease beneath surface location if produced. Attach separate description page or map if necessary.)

T1S R68W Section 11: S2SE/4; Section 14: S2NE/4; SE/4 Section 24: NW/4

Total Acres in Described Lease: 480 Described Mineral Lease is:  Fee  State  Federal  Indian

Federal or State Lease # \_\_\_\_\_

Distance from Completed Portion of Wellbore to Nearest Lease Line of described lease: 0 Feet

**CULTURAL DISTANCE INFORMATION**

Distance to nearest:

Building: 2163 Feet

Building Unit: 2163 Feet

High Occupancy Building Unit: 3446 Feet

Designated Outside Activity Area: 5280 Feet

Public Road: 310 Feet

Above Ground Utility: 2107 Feet

Railroad: 5010 Feet

Property Line: 260 Feet

**INSTRUCTIONS:**

- All measurements shall be provided from center of the Proposed Well to nearest of each cultural feature as described in Rule 303.a.(5).

- Enter 5280 for distance greater than 1 mile.

- Building - nearest building of any type. If nearest Building is a Building Unit, enter same distance for both.

- Building Unit, High Occupancy Building Unit, and Designated Outside Activity Area - as defined in 100-Series Rules.

**DESIGNATED SETBACK LOCATION INFORMATION**

Check all that apply. This location is within a:  Buffer Zone  
 Exception Zone  
 Urban Mitigation Area

- Buffer Zone – as described in Rule 604.a.(2), within 1,000' of a Building Unit

- Exception Zone - as described in Rule 604.a.(1), within 500' of a Building Unit.

- Urban Mitigation Area - as defined in 100-Series Rules.

Pre-application Notifications (required if location is within 1,000 feet of a building unit):

Date of Rule 305.a.(1) Urban Mitigation Area Notification to Local Government: \_\_\_\_\_

Date of Rule 305.a.(2) Buffer Zone Notification to Building Unit Owners: \_\_\_\_\_

**SPACING and UNIT INFORMATION**

Distance from completed portion of proposed wellbore to nearest completed portion of offset wellbore permitted or completed in the same formation: 330 Feet

Distance from Completed Portion of Wellbore to Nearest Unit Boundary 465 Feet (Enter 5280 for distance greater than 1 mile.)

Federal or State Unit Name (if appl): \_\_\_\_\_ Unit Number: \_\_\_\_\_

**SPACING & FORMATIONS COMMENTS**

The proposed spacing unit is comprised of 560 acres: Sec. 14: NWNE, SWNE, NWSE, SWSE; Sec. 13: NENE, SENE, NESE, SESE; Sec. 23: NWNE, SWNE, NWSE; Sec. 24: NENE, SENE, NESE

**OBJECTIVE FORMATIONS**

Objective Formation(s)	Formation Code	Spacing Order Number(s)	Unit Acreage Assigned to Well	Unit Configuration (N/2, SE/4, etc.)
NIOBRARA	NBRR		560	GWA

**DRILLING PROGRAM**

Proposed Total Measured Depth: 15730 Feet

Distance from proposed wellbore to nearest existing or permitted wellbore belonging to another operator:

472 Feet (Including plugged wells)

Will a closed-loop drilling system be used? Yes

Is H<sub>2</sub>S gas reasonably expected to be encountered during drilling operations at concentrations greater than or equal to 100 ppm? No (If Yes, attach an H<sub>2</sub>S Drilling Operations Plan)

Will salt sections be encountered during drilling? No

Will salt based (>15,000 ppm Cl) drilling fluids be used? No

Will oil based drilling fluids be used? No

BOP Equipment Type:  Annular Preventor  Double Ram  Rotating Head  None

### GROUNDWATER BASELINE SAMPLING AND MONITORING AND WATER WELL SAMPLING

Water well sampling required per Rule 318A

### DRILLING WASTE MANAGEMENT PROGRAM

Drilling Fluids Disposal: OFFSITE Drilling Fluids Disposal Methods: Commercial Disposal

Cuttings Disposal: OFFSITE Cuttings Disposal Method: Commercial Disposal

Other Disposal Description:

Beneficial reuse or land application plan submitted? \_\_\_\_\_

Reuse Facility ID: \_\_\_\_\_ or Document Number: \_\_\_\_\_

### CASING PROGRAM

Casing Type	Size of Hole	Size of Casing	Wt/Ft	Csg/Liner Top	Setting Depth	Sacks Cmt	Cmt Btm	Cmt Top
SURF	12+1/4	9+5/8	36	0	1200	450	1200	0
1ST	8+3/4	7	26	0	7586	600	7586	3000
1ST LINER	6+1/8	4+1/2	11.6	7186	15730			

Conductor Casing is NOT planned

### DESIGNATED SETBACK LOCATION EXCEPTIONS

Check all that apply:

- Rule 604.a.(1)A. Exception Zone (within 500' of Building Unit)
- Rule 604.b.(1)A. Exception Location (existing or approved Oil & Gas Location now within a Designated Setback as a result of Rule 604.a.)
- Rule 604.b.(1)B. Exception Location (existing or approved Oil & Gas Location is within a Designated Setback due to Building Unit construction after Location approval)
- Rule 604.b.(2) Exception Location (SUA or site-specific development plan executed on or before August 1, 2013)
- Rule 604.b.(3) Exception Location (Building Units constructed after August 1, 2013 within setback per an SUA or site-specific development plan)

### GREATER WATTENBERG AREA LOCATION EXCEPTIONS

Check all that apply:

- Rule 318A.a. Exception Location (GWA Windows).
- Rule 318A.c. Exception Location (GWA Twinning).

### RULE 502.b VARIANCE REQUEST

- Rule 502.b. Variance Request from COGCC Rule or Spacing Order Number \_\_\_\_\_

## OTHER LOCATION EXCEPTIONS

Check all that apply:

- Rule 318.c. Exception Location from Rule or Spacing Order Number \_\_\_\_\_
- Rule 603.a.(2) Exception Location (Property Line Setback).

ALL exceptions and variances require attached Request Letter(s). Refer to applicable rule for additional required attachments (e.g. waivers, certifications, SUAs).

## OPERATOR COMMENTS AND SUBMITTAL

Comments Distance from completed portion of the wellbore to nearest wellbore permitted or completed in the same formation was measured to Ivey M 14-23HN. Distance to nearest permitted or existing wellbore penetrating object formation was measured to the North York Land Assoc 1-14.

This application is in a Comprehensive Drilling Plan \_\_\_\_\_ CDP #: \_\_\_\_\_

Location ID: 442411

Is this application being submitted with an Oil and Gas Location Assessment application? No

I hereby certify all statements made in this form are, to the best of my knowledge, true, correct, and complete.

Signed: \_\_\_\_\_ Print Name: Erin Ekblad

Title: Permit Agent Date: 6/24/2015 Email: eekblad@syrinfo.com

Operator must have a valid water right or permit allowing for industrial use or purchased water from a seller that has a valid water right or permit allowing for industrial use, otherwise an application for a change in type of use is required under Colorado law. Operator must also use the water in the location set forth in the water right decree or well permit, otherwise an application for a change in place of use is required under Colorado law. Section 37-92-103(5), C.R.S. (2011).

Based on the information provided herein, this Application for Permit-to-Drill complies with COGCC Rules and applicable orders and is hereby approved.

COGCC Approved:  Director of COGCC Date: 11/20/2015

Expiration Date: 11/19/2017

**API NUMBER**

05 001 09911 00

## Conditions Of Approval

All representations, stipulations and conditions of approval stated in the Form 2A for this location shall constitute representations, stipulations and conditions of approval for this Form 2 Permit-to-Drill and are enforceable to the same extent as all other representations, stipulations and conditions of approval stated in this Permit-to-Drill.

<u>COA Type</u>	<u>Description</u>
	Operator acknowledges the proximity of the listed wells. Operator agrees to: provide mitigation option 1 or 2 (per the DJ Basin Horizontal Offset Policy) to mitigate the situation, ensure all applicable documentation is submitted based on the selected mitigation option chosen, and submit a Form 42 ("OFFSET MITIGATION COMPLETED") stating that appropriate mitigation occurred and that it has been completed, prior to the hydraulic stimulation of this well. NORTHSTAR #24-2 API# 001-08869, SCHNIEDER #1-14 API # 001-08381
	1) Submit Form 42 electronically to COGCC 48 hours prior to MIRU for first well on pad, subsequent wells 48 hours prior to spud. 2) Comply with Rule 317.j. and provide cement coverage from end of 7" casing to a minimum of 200' above Niobrara and from 200' below Sussex to 200' above Sussex. Verify coverage with cement bond log.

## Best Management Practices

<u>No</u>	<u>BMP/COA Type</u>	<u>Description</u>
1	Planning	Multi-well Pads. It is a multi-well pad located in a manner which allows for resource extraction while maintaining the highest distances possible from the offsetting residential areas.
2	Traffic control	Access roads. The access road will be constructed to accommodate local emergency vehicles. This road will be maintained for access at all times.
3	General Housekeeping	Fencing requirements. A permanent fencing plan will be reviewed by the surface owner, and the applicant.
4	General Housekeeping	Removal of surface trash. All trash, debris and material not intrinsic to the operation of the oil and gas facility shall be removed and legally disposed of as is applicable.
5	Material Handling and Spill Prevention	Leak Detection Plan. Pumper will visit the location daily and visually inspect all tanks and fittings for leaks. Additionally, monthly documented SPCCP inspections are conducted pursuant to 40 CFR 112.
6	Material Handling and Spill Prevention	Berm Construction. Tank berms shall be constructed of steel rings with a synthetic or engineered liner and designed to contain 150% of the capacity of the largest tank. All berms will be visually checked periodically to ensure proper working condition.
7	Material Handling and Spill Prevention	Load Lines. All load lines shall be bull-plugged or capped.
8	Material Handling and Spill Prevention	Tank specifications. Tanks will be designed, constructed and maintained in accordance with NFPA Code 30. The tanks are visually inspected once a day for issues and recorded inspections are conducted once a month.
9	Drilling/Completion Operations	Green Completions - Emission Control Systems. Test separators and associated flow lines and sand traps shall be installed on-site to accommodate Green completion techniques pursuant to COGCC Rules. In the anticipated absence of a viable gas sales line, the flow-back gas shall be thermally oxidized in an emissions control device (ECD), which will be installed and kept in operable condition for at least the first 90 days of production pursuant to CDPHE rules. The ECD shall have an adequate capacity for 1.5 times the largest flow-back within a 10 mile radius, will be flanged to route gas to other or permanent oxidizing equipment and shall be provided with the equipment needed to maintain combustion where non-combustible gases are present.
10	Drilling/Completion Operations	Blowout preventer equipment ("BOPE"). A double ram and annular preventer will be used during drilling. At least the drilling company shall have a valid well blowout prevention certifications.

11	Drilling/Completion Operations	BOPE for well servicing operations. Adequate BOP equipment shall be used. Stabbing valves shall be installed in the event of reverse circulation and shall be prior tested with low and high pressure fluid.
12	Drilling/Completion Operations	Drill stem tests. Not applicable, no Drill stem tests are planned.
13	Drilling/Completion Operations	Control of Fire Hazards. All materials which are considered fire hazards shall be a minimum of 25' from the wellhead tanks or separators. Electrical equipment shall comply with API RP 500 and will comply with the current national electrical code. An emergency response plan has been generated for this site.
14	Drilling/Completion Operations	Guy line anchors. All guy line anchors shall be brightly marked pursuant to Rule 604.c (2)Q.
15	Drilling/Completion Operations	Closed Loop Drilling Systems - Pit Restrictions. Not Applicable; a closed loop system will be used for drilling.
16	Drilling/Completion Operations	Pit Level indicators. Not applicable; a closed-loop system will be used and no pits shall be dug.
17	Drilling/Completion Operations	One of the first wells drilled on the pad will be logged with open-hole Resistivity Log and Gamma Ray Log from the kick-off point into the surface casing. All wells on the pad will have a cement bond log with gamma-ray run on production casing (or on intermediate casing if production liner is run) into the surface casing. The horizontal portion of every well will be logged with a measured-while-drilling gamma-ray log. The Form 5, Completion Report, for each well on the pad will list all logs run and have those logs attached. The Form 5 for a well without open-hole logs shall clearly state "No open-hole logs were run" and shall clearly identify (by API#, well name & number) the well in which open-hole logs were run.
18	Final Reclamation	Well site cleared. Within 90 days subsequent to the time of plugging and abandonment of the entire site, superfluous debris and equipment shall be removed from the site.
19	Final Reclamation	Identification of plugged and abandoned wells. P & A'd wells shall be identified pursuant to 319.a.(5).

Total: 19 comment(s)

### **Applicable Policies and Notices to Operators**

Policy
Notice Concerning Operating Requirements for Wildlife Protection. <a href="http://cogcc.state.co.us/documents/reg/Policies/Wildlife_Notice.pdf">http://cogcc.state.co.us/documents/reg/Policies/Wildlife_Notice.pdf</a>
Policy for Bradenhead Monitoring During Hydraulic Fracturing Treatments in the Greater Wattenberg Area. <a href="http://cogcc.state.co.us/documents/reg/Policies/PolicyGwaBradenheadMonitoringFinal.pdf">http://cogcc.state.co.us/documents/reg/Policies/PolicyGwaBradenheadMonitoringFinal.pdf</a>

### **Attachment Check List**

<b><u>Att Doc Num</u></b>	<b><u>Name</u></b>
400857174	FORM 2 SUBMITTED
400857625	OffsetWellEvaluations Data
400857704	WASTE MANAGEMENT PLAN
400857705	WELL LOCATION PLAT
400857706	DEVIATED DRILLING PLAN
400857751	DIRECTIONAL DATA
400857753	OTHER
400857915	EXCEPTION LOC REQUEST
400857918	EXCEPTION LOC WAIVERS
400857919	PROPOSED SPACING UNIT

Total Attach: 10 Files

### General Comments

<u>User Group</u>	<u>Comment</u>	<u>Comment Date</u>
Permit	Final Review Completed.	11/18/2015 12:02:20 PM
Engineer	offset COA wells - lack demonstrated cement across the Fox Hills (indicate that there was a DV tool with cement but no CBL); look to also have short Nio coverage.	11/15/2015 10:18:07 AM
Permit	Permitting Review Complete.	10/27/2015 9:55:11 AM
Permit	Revised distance to the nearest wellbore in the same formation from 472 to 330 per the operator.	8/14/2015 8:59:11 AM
Permit	Added wellbore integrity contact information provided by the operator.	8/6/2015 11:28:15 AM
Permit	Requested revised distance to the nearest wellbore completed in the same formation for the Spacing tab.	8/6/2015 11:27:05 AM
Permit	Corrected distance to nearest lease line from 465 to 0 per the operator's request.	8/6/2015 11:15:14 AM
Permit	Added the location ID per the operator.	7/30/2015 10:17:48 AM
Permit	Passed Completeness.	6/25/2015 4:08:51 PM

Total: 9 comment(s)